Updated:
October 7, 1997

NSERC *Contact*

Volume 22, No. 3
Fall 1997

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Technical Successes: Some Good News for Canadians

Editorial by Tom Brzustowski

I have some good news. I feel that 1997 has so far been an outstanding year of public success and recognition for Canadian S&T. What I mean by that is that in the first few months of this year, the Canadian media gave serious attention to some very significant accomplishments by Canadian scientists and engineers. Recalling the major national stories that caught my attention, I see a chain of technical successes from east to west across Canada.

Here is what I mean. Off Newfoundland, the Hibernia platform has been completed and is in place. In the Maritimes, the fixed link to P.E.I. has been opened. Moving west to Montreal, we see that Bombardier's Regional Jet has crossed the magic threshold of 250

sales that make it a money-maker. Further west along the Ottawa River, the success of their products in world markets has lead both Nortel and Newbridge to announce the creation of thousands of new jobs and major investments in facilities in Ottawa. Continuing west, we come to Manitoba where the Winnipeg Floodway worked successfully when tested by nature on the rampage. Moving to Alberta, we find that technology for extracting oil from the Tar Sands has quietly improved to such an extent that major new investments have been committed for additional capacity. And in B.C., the success of Ballard Power with their fuel cells has led to an alliance with Daimler-Benz to develop fuel cells for production vehicles.

There are NSERC stories associated with each of these developments. For example, the fixed link is instrumented so that the behaviour of the bridge under load can be monitored. Nortel has been a partner to NSERC in setting up Industrial Research Chairs dealing with many areas of research in telecommunications in many universities. The NSERC stories range over a rich history of basic research in the universities and research projects with industrial and government partners. But the common denominator is people — people who were supported by NSERC in their advanced training, and also accomplished people who contributed their expertise to the work of NSERC to make it better for those who would follow.

The stories that I have mentioned are the stories that I remember most vividly from the early months of 1997. Other people may have been struck by other stories, and there have been many new ones since. The point is that Canadian S&T is having a substantial positive impact on the prosperity and the well-being of Canadians. With the assistance of NSERC, researchers in Canadian universities are building the foundations for that impact, and the media are bringing the successes to the attention of the public. I think that's all very good news.

- Tom Brzustowski
President

Ethics Code Undergoes Final Consultations

NSERC, the Social Sciences and Humanities Research Council (SSHRC) and the Medical Research Council (MRC) have released the final report of the Tri-Council Working Group on Ethical Conduct for Research Involving Humans. This report is the result of a complex exercise begun in 1994. It will replace the existing MRC and SSHRC guidelines with an updated and comprehensive Code covering all research with human subjects supported by the three Councils.

The Working Group published an issues paper in late 1994, and a discussion document in 1996, to stimulate input from the university community. The Councils received more than 2,000 pages of comments, all of which were given careful consideration.

Before adopting the proposed code, the Councils are seeking additional advice.

On behalf of SSHRC, the Humanities and Social Sciences Federation of Canada is holding five regional consultation meetings across Canada during September and October.

As there is some overlap between the organizations representing SSHRC and NSERC researchers, some organizations representing the NSERC community are also participating.

The Vice Presidents (Research) at Canada's universities have been asked to represent the views of their institutions, especially on the procedural aspects of the proposed joint policy; and the Associate Deans (Research) of the Faculties of Medicine, in collaboration with the Association of Canadian Medical Colleges, have been asked to represent the views of the bio-medical researchers in their universities.

The consultations are focusing on three essential questions:

- Will the Code enhance the protection of participants in research?
- Will the Code allow research to be carried out without unreasonable constraints?
- Will the Code provide effective mechanisms to review ethical requirements and enhance the accountability of universities, research councils and researchers?

The Councils will consider whether the issues raised in these consultations require changes to be made before adopting the Code.

Copies of the report are available primarily from the Web (http://www.mrc.hwc.ca/ethics/code/english/index.html).

Introducing ... Secretary of State Ronald J. Duhamel

The new Cabinet team announced on June 11 by Prime Minister Jean Chrétien included a new appointment to the Industry Portfolio: Dr. Ronald J. Duhamel as Secretary of State (Science, Research and Development) and (Western Economic Diversification).

NSERC's work to foster the discovery and application of knowledge is of particular interest to Dr. Duhamel: "Canada can preserve a place for itself at the forefront of the competitive global economy by building the knowledge base upon which innovation depends. I hope to contribute to this process by communicating the value and importance of S&T for Canada, and by serving as an advocate for appropriate and generous research funding."

Dr. Duhamel was first elected to the House of Commons in 1988 as

the Member of Parliament representing the Manitoba riding of St. Boniface. He has since been re-elected in 1993 and 1997.

Prior to entering politics, Dr. Duhamel held several posts in the public service, including that of Deputy Minister of Education. He has also been a teacher, a principal, and a professor. He obtained a B.A. from Lakehead University and holds a master's degree and doctorate from the University of Toronto, both of which were completed with distinction. He is a published author and a frequent public speaker.

Since his election to the House of Commons, Dr. Duhamel has held a variety of positions. He has served as Parliamentary Secretary to both the President of the Treasury Board and the Minister of Public Works and Government Services. Apart from serving as a member of the Standing Committee on Finance, he was a co-chair of the Sub-Committee on the Review of Special Imports Measures Act of the Standing Committee on Finance, and Chair of the Task Force on a Policy for an Aging Population.

Dr. Duhamel has won several prestigious awards, including the Young Leadership of America Award from the international educational fraternity Phi Delta Kappa in 1980. He is one of only two Canadians to ever receive this recognition. The award honours "outstanding leadership potential in young men and women." In 1987, Dr. Duhamel was the recipient of the Manitoba Lieutenant-Governor's Medal in Public Administration.

Since taking up the position of Secretary of State, Dr. Duhamel has been meeting with members of the science and technology community from across the country. "I look forward to working with NSERC to advance understanding and build a strong economy for all Canadians."

Important Reallocations News

The Reallocations Committee, which will be advising Council on future allocations to the various science and engineering disciplines that NSERC supports, held its first meeting in June. As a result of this meeting, there are important clarifications of the requirements that members of the steering committees and the research community should be aware of. Feedback on the committee's discussions and interpretations, as well as the most recent information on the reallocations process, is posted on NSERC's Web site (http://www.nserc.ca/programs/allo1.htm). This Web page is linked to an updated schedule for the Reallocations Exercise.

Answers to commonly asked questions about the exercise are also on the Web, and will be updated during the fall. Check the site to stay abreast of the most recent developments.

Giving Thanks...

If you've just finished a successful summer in the field, chances are that you owe some of that success to local people. Why not take a few minutes then, to send a note of thanks? Or, let us join you in thanking them.

Remember, if you are funded by NSERC in any capacity, you may nominate private citizens who have provided assistance, or material or logistic support. For instance, a chemical engineering professor at Dalhousie University recently nominated two employees of an American firm that gave him access to its testing facility near Kansas City, Missouri, and paid for the materials needed as well. He estimated the cash equivalent of the firm's contribution at $60,000, and said that the research could not have been undertaken without this support. Both individuals also displayed a keen interest in the personal well-being of the Ph.D. candidate under the professor's supervision who spent the summer there, providing him with a wonderful training opportunity.

Now, more than ever before, when the research enterprise is in need of public support, it is particularly important for researchers to take the time to communicate with the public and in doing so, help to build support for research sponsored by NSERC.

To nominate one or more individuals, just send us a note including details of how they helped you as well as their name and mailing address, and we'll send them a "Friend of NSERC" certificate thanking them on your behalf and NSERC's for their help (note: the intent is not to recognize personal acts of kindness and courtesy — that is left to the individual who experienced them).

Address nominations to:

Friends of NSERC
Communications Division
NSERC
Ottawa, Ontario K1A 1H5
Fax: (613) 943-0742
E-mail: comm@nserc.ca

Women in Science and Engineering Chairs at Memorial and UBC

Two of the winners in the national competition for NSERC Chairs for Women in Science and Engineering (CWSE) recently took up their new positions. Designed to encourage the participation of women in science and engineering, the chairs are among five to be supported by NSERC over the next five years. NSERC's commitment of $250,000 per chair will be matched or exceeded by contributions from the corporate sponsors. For a description of the role of the chairholders and of the other three winners, see the Summer issue

Dr. Mary Williams, a Senior Research Officer in the Institute for Marine Dynamics (IMD) of the National Research Council, has been jointly appointed to the Faculty of Engineering and Applied Science and to the Faculty of Science at Memorial University of Newfoundland. She is one of Canada's foremost researchers in ice engineering. In addition to her research accomplishments, she is well known for her ability to communicate to a lay audience and for her activities in encouraging young women to take up careers in science and engineering. The National Research Council has guaranteed Dr. Williams continued access to its state-of-the art ice tanks at IMD, and will commit $50,000 a year towards a collaborative program for a postdoctoral fellow and a student. Petro-Canada is co-sponsoring the chair.

Dr. Maria Klawe is the University of British Columbia's Vice-President for Student and Academic Services and a Professor in the Department of Computer Science. In her six years as head of UBC's Department of Computer Science, Dr. Klawe built the department into one of Canada's most highly respected teaching and research units. Her research in the last several years has focused on an interdisciplinary project to develop computer games to help children, especially girls, learn mathematics. She has been influential in helping create programs to attract and support women in computing careers. In 1995, she was appointed UBC's Vice-President for Student and Academic Services. IBM Pacific Development Centre, Burnaby, B.C., is the corporate sponsor.

October Is Women's History Month

Women's History Month (WHM) celebrates women s contributions to Canada's development. The focus for WHM 1997 is "Discovering Women in Science and Technology." For information, contact:

Status of Women Canada
700-360 Albert Street
Ottawa, Ontario K1A 1C3
Phone: (613) 995-7835
Fax: (613) 943-2386
E-mail: vilas@swc-cfc.gc.ca
Internet: http://www.swc-cfc.gc.ca

Integrity in Research: Recognizing the Contributions of Others

As a public service, NSERC reports on cases of misconduct and on the sanctions that are taken as a result of investigations by the NSERC Committee on Professional and Scientific Integrity. In accordance with the federal Privacy Act, however, NSERC does not

disclose the identity of an individual subjected to sanctions.

All NSERC applicants are responsible for the integrity of their proposals; as the following case illustrates, applicants are expected to acknowledge the contributions that other individuals have made to their proposals.

In 1994, a researcher submitted an application for an NSERC Research Grant. As part of the evaluation, the application was sent to external reviewers. Subsequently, one of the reviewers contacted NSERC to indicate that parts of the proposal appeared to be plagiarized from an application that reviewer had submitted to a U.S. agency. The case was referred to the university to investigate and report back to NSERC. The university's investigative committee concluded that a student, who had written the proposal for the applicant, had previously had access to the U.S. proposal and had plagiarized parts of it in the NSERC application. No sanction was imposed on the student as the investigative committee considered that the student had been through a long ordeal during the investigation. It was concluded that the supervisor, the NSERC applicant, was not involved in the plagiarism and should therefore be absolved of all responsibility for the matter.

NSERC's Committee on Professional and Scientific Integrity (CPSI) reviewed this case and agreed with the conclusions that the student had committed the plagiarism and that the applicant was not involved in the plagiarism. However, the CPSI noted that the applicant had not indicated that another individual was the author of the proposal, and in so doing, had not acknowledged the substantive contribution made by the student in preparing the application. This was viewed as a breach of the tri-council policy on integrity in research and scholarship. The CPSI therefore recommended that the applicant be barred from applying for NSERC funding for one year. The same penalty was recommended for the student. These penalties were approved by NSERC's president and have been implemented.

International Olympiads Held in Canada

The 1997 International Physics and Chemistry Olympiads were held this summer in Sudbury and Montreal respectively. NSERC is a major sponsor of the Olympiads, which are international competitions for high school students. Over 300 participants from 60 countries took part in the competitions. Students participated in exams as well as several cultural activities.

Julie Payette, a Canadian Astronaut and a member of NSERC's Council, officially opened the 28th International Physics Olympiad at Science North in Sudbury.

NSERC Hosts Meeting of NATO Science

Fellowships Administrators

This year it was Canada's turn to host the annual meeting of the NATO Science Fellowships Program administrators. The 1997 meeting was held in Ottawa from June 17 to 20 and was attended by the national administrators of the program from each of the 16 NATO countries.

NSERC's president, Dr. Tom Brzustowski, addressed the delegates on the subject of funding for R&D in Canada and NSERC's role. Dr. Art May, President of Memorial University of Newfoundland and Canada's representative on the NATO Science Committee, briefed the delegates on the history of the NATO Science Program and on the review of the program which NATO has currently commissioned. Other invited speakers included current and former fellowship holders who discussed how the international experience and prestige of the awards had helped them to achieve their professional goals. The meeting was also attended by the chair of the NATO High Level Review Group, Dr. Roland Schmitt, President Emeritus of the Rensselaer Polytechnic Institute in New York, who took the opportunity of this meeting to discuss with the delegates and the fellows the impact of the fellowship program in their own countries.

The meeting agenda also included visits to NORTEL (Northern Telecom) and the National Research Council's Institute for Microstructural Sciences and Institute for Information Technology, where delegates heard presentations on the research being conducted and were given a tour of the facilities.

The NATO Science Fellowships provide opportunities for scientists to pursue their work or to continue their training at the most prestigious institutions in NATO countries and to establish links with researchers from Central and Eastern Europe, NATO's Cooperation Partners (CP). Some 1300 fellows will be selected for these awards in 1997. In Canada, where the program is administered by NSERC, approximately 10 fellowships are awarded in an annual competition to recent doctoral graduates from the CP countries and are tenable at Canadian universities under the supervision of an NSERC grantee.

Foundation Promotes Collaboration Between Argentina and Canada

To facilitate collaboration between Canadian and Argentine researchers, an Argentine institution, Fundacion Antorchas, will provide research awards to Argentine researchers working with NSERC grantees.

Canadians who want to work with Argentine colleagues on a specific project can use their NSERC grant or apply for one. The Argentine partner can then apply to Fundacion Antorchas for counterpart funds.

NSERC supports international cooperation through its regular grants programs. The terms and conditions of the grants awarded are sufficiently flexible to permit their use for international collaboration purposes. For more information, contact NSERC at (613) 995-1818, or visit the International Relations section of our Web site at http://www.nserc.ca/intnew.htm

Members of the Canada Foundation for Innovation

Appointed September 17, 1997

Dr. Jim Friesen
University of Toronto

Dr. Art Hanson
International Institute for Sustainable Development

Dr. Monique Lefebvre
Quebecor Multimedia

Dr. Julia Levy
QLT PhotoTherapeutics Inc.

Mrs. Judith Maxwell
Canadian Policy Research Network

Mrs. Edythe A. Parkinson-Marcoux
Consultant

Mr. Guy Saint-Pierre
SNC-Lavalin Group Incorporated

Dr. Matt Spence
Alberta Heritage Foundation for Medical Research

Dr. Ron Steer
University of Saskatchewan

Appointed July 31, 1997

Dr. Angus Bruneau
Air Nova

Dr. Gilles Cloutier
Consultant

Mr. Robert J. Giroux
Association of Universities and Colleges of Canada

Ms. Dorothy Lamont
Canadian Cancer Society and

National Cancer Institute of Canada

Dr. Peter J. Nicholson
BCE Inc.

Dr. Martha Piper
University of British Columbia

Canada Foundation for Innovation: Drs. Brimacombe and Gagnon to Head Up CFI

On September 17, Dr. John Evans, Chair of the Canada Foundation for Innovation, announced the appointment of Dr. Keith Brimacombe as President and CEO, and of Dr. Denis Gagnon as Senior Vice President of the corporation, effective October 1, 1997. He also announced that nine prominent Canadians have been appointed members of the Foundation.

The Canada Foundation for Innovation was established in May, with an $800 million endowment from the federal government (see *Contact*, Vol. 22, No. 1, p. 4). Its mandate over the next five years is to invest in infrastructure for research and development in Canadian universities, colleges, hospitals and other not-for-profit research institutions.

Dr. Brimacombe is Director of the Centre for Metallurgical Process Engineering and holder of the Alcan Chair of Process Engineering at the University of British Columbia. An Officer of the Order of Canada and the 1997 recipient of NSERC's most prestigious award, the Canada Gold Medal for Science and Engineering, Dr. Brimacombe is a member of several professional associations including The Metallurgical Society of the Canadian Institute of Mining, Metallurgy and Petroleum Engineers, and the Royal Society of Canada.

Dr. Gagnon is former Vice-Rector Research of Laval University. A Member of the Order of Canada, Dr. Gagnon has also served as a member of the executive committees of several national and provincial research organizations including the Medical Research Council, NSERC, and the Fonds de la recherche en santé du Québec.

Drs. Brimacombe and Gagnon will be responsible for developing and implementing policies and programs designed to modernize Canada's research infrastructure. They will also build partnerships with the private, voluntary and public sectors to invest in research infrastructure projects in Canadian institutions.

The newly appointed Members join six others who were appointed by the government on July 31 (see below for complete membership).

The Foundation's 15 members, whose roles are similar to the shareholders of a corporation, are responsible for approving the organization's financial controls, audited statements, and annual

report. Their first task was to elect eight of the Foundation's 15 directors. Dr. John Evans also serves as a director. Six other directors will be appointed by the government of Canada later this fall. Drawn primarily from the research and business communities, the directors will decide which projects should receive support and how the Foundation's funds will be allocated.

For additional information on the Foundation, visit its Web site, www.innovation.ca

Communications Committee Begins Work

NSERC now has a standing Committee on Communications. Its purpose is to advise us on how we can best communicate with our publics. We hope, too, that the members will function as a network of NSERC "advocates" across the country.

Three Council members are on the committee: Michèle Thibodeau-DeGuire, President and CEO of Centraide (the United Way) of Greater Montreal; Thomas C. Hutchinson, a professor in the Environmental and Resource Studies Program at Trent University; and Julie Payette, a member of the Canadian Astronaut Program.

Four university-sector communications experts will participate: Paul-Émile Benoît, communications director at the Université de Moncton; Michelle Gallant, who holds the same title at Dalhousie University; Owen Roberts, an expert in the popularization of science at Guelph University; and Edna Einseidel, a professor in the Graduate Faculty of Communications at the University of Calgary.

Sophie Malavoy, the editor of *Interface*; Lawrence MacDonald, who heads up a communications firm in Victoria, B.C.; and Peter Calamai, consultant and former editor of *The Ottawa Citizen*, are also members.

The Committee will be holding its first meeting in October.

Research Update

Canadian Environmental Cleanup Technology "Faster, Cheaper, Cleaner and Smarter"

On September 10, NSERC, Motorola Canada Limited, the University of Waterloo, and EnviroMetal Technologies Inc. announced they were jointly committing more than $2.6 million over five years to establish a Groundwater Remediation Chair at the Waterloo Centre for Groundwater Research.

Groundwater contamination by halogenated organic compounds (HOC's), used in industrial sectors, is an environmental problem. The

leading edge research at the University of Waterloo offers significant promise for an effective, cheaper method of cleaning up these contaminants.

"Dr. Bob Gillham [chairholder] and his research team are recognized leaders in the field of on-site contaminant remediation," said NSERC President Dr. Tom Brzustowski. "This Chair will strengthen Canada's lead in the development of this environmental technology and train students in advanced research techniques."

The zero valent iron process starts with a wall which is inserted into the ground and filled with recycled iron filings. The groundwater passively flows through the wall wherein the contaminants are broken down into nontoxic end-products which do not require further treatment or special handling. The research activities will focus on expanding the groundwater remediation process to accommodate a variety of site requirements and to study the long-term benefits of the iron wall technology.

Young Faculty Compete Successfully

Some participants at last fall's Workshop on the Needs of the Next Generation of Canadian University Researchers felt that Strategic Project Grants were perceived to be favouring established senior researchers as opposed to new faculty. In response to this observation, NSERC staff reviewed the age profile of Strategic grantees over a six-year period (1991-1996) using the year of Bachelor's degree as a proxy for age.

Staff found that young researchers are participating successfully in the program. Indeed, a shift seems to be developing over time whereby the success rate in the program of young researchers is increasing whereas the success rate of the most senior researchers is declining. Overall, participation in the program is spread across all age groups and the evidence suggests that young faculty compete successfully relative to their senior colleagues.

CONTACT Readership Questionnaire

We're conducting a readership survey to help us determine whether ***CONTACT*** satisfies the needs of our readers. Your views will be invaluable to us as we plan future issues. Please take a few moments to complete the questionnaire below, then fax it to (613) 943-0742 or mail it to the address at the end of this survey, by **Friday, October 31**. Thanks. We appreciate your help.

To print only the questionnaire, follow this link.

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1. Overall, is ***CONTACT*** meeting your information needs about the

Council and its programs?

__ Yes __ No

Comments:

_____
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2. ***CONTACT*** publishes a variety of articles. How important are each of the following types of articles to you? [1 Not Important; 2 Somewhat Important; 3 Very Important]

__ Reader opinions and letters on issues of importance to NSERC's community
__ NSERC policy and funding decisions affecting grants or scholarships
__ Analysis and presentation of NSERC competition results
__ Guidelines and tips on application procedures
__ Announcements of new University-Industry chairs and other awards
__ Interviews with representatives of government, academia, and industry on current issues of importance to NSERC's community
__ News of appointments, achievements, international awards, coming events
__ The President's editorials

3. In your opinion, do the following types of articles belong in ***CONTACT***? [Yes or No]

__ Y __ N articles on non-NSERC funding sources available to researchers
__ Y __ N notes on specific research needs/gaps identified by government, industry or non-governmental organizations
__ Y __ N features on specialized research facilities available to NSERC researchers
__ Y __ N tips on how to publicize research or to improve skills in communicating to the media and general public
__ Y __ N news of discoveries based on research funded by NSERC grants or scholarships

List other topics you would like to read about in ***CONTACT***.

_____
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4. ***CONTACT*** is published regularly four times per year.

__ Check this box if you find the newsletter timely

OR

one of these if you think it should be published

__ more often
__ less often.

Comments

_____
_____
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_____

5. ***CONTACT*** is available online as well as in print (our Internet address is http://www.nserc.ca/publicat.htm)

a) Were you aware that you could access the newsletter online?
__ Yes __ No

If yes,

i) how did you learn about it?

_____

ii) have you accessed it online?
__ Yes __ No

b) Do you think we should

__ keep both printed and online versions, or
__ produce an online version only?

c) If you prefer to read ***CONTACT*** electronically, which format do you prefer?

__ PDF format (Portable Document Format)
__ HTML format (Hypertext Markup Language)
__ PS format (Postscript Format)
__ TXT format (ASCII Format -- no formatting involved)

6. a) Do you like the current ***CONTACT*** format, layout and balance of text and illustrations?

__ Yes __ No

Comments

_____
_____
_____
_____
_____

b) If you are reading ***CONTACT*** on the Web, do you find

__ it easy to find the articles you are interested in, or
__ the titles are not as helpful as you would like?

7. Which of the following describes your affiliation? [Check one]

__ government
__ industry
__ university
__ other

8. What best describes your current position? [Check one]

__ head of company/organization
__ scientific or technical management
__ non-scientific, non-technical management (e.g., administration, marketing)
__ scientist or engineer
__ news media
__ science writer
__ public relations
__ student
__ other (please specify)

9. If you are a university-based researcher, indicate if you receive the following NSERC award(s)

__ research grant
__ collaborative project or special project grant
__ strategic grant
__ university-industry grant
__ postgraduate scholarship or postdoctoral fellowship

10. Do you have any other thoughts about ***CONTACT*** that you wish to share with us?

THANKS AGAIN.

Please fax to (613) 943-0742, or mail to:

Mariane Legault
Communications Division
NSERC

350 Albert Street
Ottawa, Ontario K1A 1H5